

tion with the OFFICIAL JOURNAL of the California Medical Association during these many years. CALIFORNIA AND WESTERN MEDICINE looks upon this record of thirty-four years of such advertising patronage as a tribute to its advertising worth in calling attention to the Eli Lilly pharmaceutical and other products. For this expression of confidence we are grateful, and we extend to Eli Lilly and Company the OFFICIAL JOURNAL'S best wishes for continued prosperity.

May we also suggest that we believe Eli Lilly and Company of Indianapolis would appreciate letters of gratulation from individual members of the California Medical Association?

**Other State Association and Component County Society News.**—Additional news concerning the activities and work of the California Medical Association and its component county medical societies is printed in this issue, commencing on page 77.

## EDITORIAL COMMENT†

### ELECTRO-ANESTHESIA

That electronarcosis is of clinical promise is currently alleged by Doctor Silver<sup>1</sup> of the Department of Physiology, University of Chicago.

Successful production of anesthesia in laboratory animals, by the application of the direct electric current, was first reported about thirty-five years ago by Leduc.<sup>2</sup> His results were afterward both confirmed and denied by certain German physiologists.<sup>3</sup> This denial may have been the main reason why adequate clinical trials of electro-anesthesia have not yet been made.

In order to determine presumptive clinical applicability of the Leduc technique, Silver made numerous preliminary tests with rats. Large dry cells, an ammeter and a rheostat were connected in series, and the current passed through the bodies of rats by means of nonpolarizable electrodes. The animals were usually anesthetized with ether before inserting the electrodes, the cathode being firmly placed against the roof of the mouth and the anode in the rectum. The strength of the current was gradually increased from zero to 10 milliamperes, and the ether then removed.

Control, etherized rats without current usually emerged from the anesthesia within five minutes. As long as the current was allowed to flow, however, the experimental animals gave no response to noxious stimuli, such as cutting, burning, or powerful tetanizing shocks. Tests have been con-

tinued up to four hours, the current being reduced to 8 milliamperes after the first half-hour.

To terminate the electro-anesthesia, the current is gradually reduced to 4 milliamperes, its direction reversed for ten seconds and then discontinued. Normal reflexes are regained within five minutes, and fully normal behavior within ten minutes. Repeated periods of electro-anesthesia, up to a total of ten hours, have led to no detectable pathologic change. With the cathode placed on the shaved skin of the shoulder, the head and forelimbs are outside the path of the current, the anesthesia being confined to the hindquarters.

Studies of the site and mechanism of the electro-anesthesia have shown that the reflex-block is in the central nervous system, and not in peripheral structures.

P. O. Box 51.

W. H. MANWARING,  
Stanford University.

### PREVENTABLE SEASONAL SUFFERING

The time-honored platitude, that "the errors of omission are worse than the errors of commission," is recalled to every doctor's mind each time he hears of a case of an entirely preventable disease, such as smallpox or diphtheria. "It's a crime that that child was not immunized," he meditates. Every year at this time, however, with unfailing regularity at least 4 per cent of California's population suffer two or more months from preventable symptoms of hay fever and asthma due to pollen allergy. We have little control over the important pollenating trees, grasses and weeds, and even less control over the winds that carry these pollens over long distances to unsuspecting victims. With modern methods of hypodermic desensitization, however, 80 per cent of these unfortunate, wet-nosed, bleary-eyed, sneezing (or wheezing) patients can have their symptoms entirely prevented, and 15 per cent may have them so minimized as to be barely noticeable. There is little excuse for allowing people to suffer from such annoying symptoms; many thousand clinical crimes are committed annually by doctors not letting their allergic patients know that they can be relieved.

Only a small minority of pollen-allergy cases are being properly treated. The large majority of sufferers do not know that they can be helped. The remainder fall into four categories: (1) those not being treated because of previous disappointments from old-fashioned, ineffectual methods or bizarre, prematurely ballyhooed, untested methods; (2) those being treated by assorted quacks; (3) those being improperly treated by medical men under a mistaken diagnosis of "chronic sinusitis," "chronic bronchitis," etc.; and (4) those that are being treated with drugs whose effects, if any, last only a few minutes or a few hours until the given dose is eliminated. Into this latter class fall the vasoconstricting nasal sprays and packs, the oral use of ephedrine and its homologues, and the oral use of adrenal products and inorganic salt mixtures. The less said of the side actions of cer-

† This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comments by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California Medical Association to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

<sup>1</sup> Silver, M. L.: Proc. Soc. Exper. Biol. and Med., 41:650 (June), 1939.

<sup>2</sup> Leduc, S.: Arch. d'électricité méd., 10:769, 1902.

<sup>3</sup> Von Neegard, K.: Arch. f. klin. chir., 122:100, 1933. Sack, G., and Koch, H.: Ztschr. f. d. ges. exp. med., 90:349, 1933.

tain commonly used drugs, the better. Oral pollen-therapy has been productive of little nasal relief, but considerable diarrhea. The economic loss caused by unnecessary "changes of climate" because of ill-informed physicians' advice is considerable.

Cases of pollen allergy should be thoroughly skin-tested, and individual mixtures of pollens for treatment chosen on the basis of these tests, plus a knowledge of the botanical peculiarities of the patient's residential district. Starting with a high dilution, subcutaneous injections of the individual extract should be administered at appropriate intervals, and increase of dosage governed by the individual's local reaction and progress. Most of the 5 per cent of "failures" with hypodermic hypsensitization are due to faulty testing and interpretation of skin-tests, inactive treatment material, or improper dosage. In the last analysis these faults are due to lack of experience or proper equipment, and still leave allergy with an immeasurably better record than any other branch of medicine.

Physicians can earn the everlasting gratitude of the unfortunate allergic adults and children in their practices by getting into contact with them, and explaining what the modern, rational practice of allergy can do for them. The most appreciative patients that we can have are the seasonal allergics who have found that, although pollination is inexorable and inevitable, their seasonal symptoms are not necessarily so. If the physician is not equipped to test and treat these cases himself, he should refer them to a competent allergist rather than persist in more or less ineffectual local or drug treatments.

The foregoing ideas were put into operation on a small scale last year, with results so interesting that they are worth summarizing. In February, 1938, five general practitioners went through their records and found sixty-eight cases of seasonal hay fever. These were communicated with by telephone, and the methods of testing and desensitization explained to them. Forty-seven had never heard of such methods, and were pleased to know about them. Thirty of this latter group reported for testing and desensitization treatment to their family physician, or to an allergist recommended by him. Twenty-six received complete relief from symptoms that spring, and the remaining four enjoyed eminently satisfactory diminution of symptoms. Of great significance, too, is the fact that twenty-eight of the thirty patients treated have either continued treatment by the perennial method, or have reported again this year for preseasonal therapy.

135 Stockton Street.

MILTON M. HARTMAN,  
San Francisco.

---

Children are not so much to be taught as to be trained. To teach a child is to give him ideas; to train him is to enable him to reduce those ideas to practice.—H. W. Beecher.

## ORIGINAL ARTICLES

### COMBINED NITROUS OXID-OXYGEN LOCAL ANESTHESIA\*

By P. K. GILMAN, M. D.  
San Francisco

FOR the third time it is my privilege to appear before the members of this section and give a brief résumé of the results of added experience with combined gas-oxygen local anesthesia.

The first report was made in 1925;<sup>1</sup> the second in 1932.<sup>2</sup> The operative cases upon which these previous communications were based were those treated at Stanford University Hospital. In the present report that practice will be continued and patients treated only in this institution included.

#### CLINICAL MATERIAL FOR THIS STUDY

The 435 operative cases upon which this report is based were private patients. A large number of patients were operated upon during this same period in the Surgical Clinic of the Stanford University Medical School, using similar anesthesia. These are not made use of, owing to the fact that several surgeons cared for this group and exhibited personal differences in preoperative preparation, operative technique, and postoperative routine.

It is imperative that certain points must be reaffirmed and again emphasized even at the cost of repetition. The first of these, in my opinion, is coöperation between not only the anesthetist and surgeon, but between anesthetist and patient.

As stated in previous communications, the staff of physician anesthetists at Stanford Hospital deserves the highest praise. Under the able leadership of Dr. Caroline Palmer, the prolonged use of gas anesthesia was begun instead of using it merely to introduce ether. Since Doctor Palmer's retirement, her successor, Dr. Adena Dutton, has maintained the high standard of efficiency and coöperation to which she fell heir. It has been my privilege to work with the members of this staff and help develop the use of nitrous-oxid-oxygen in all types of surgery where a general anesthetic is indicated.

Any general anesthesia, irrespective of the agent used to produce it, is the result of a definite combination of interests. These are even more important and necessary if a perfect anesthesia is to result with nitrous-oxid as the agent.

To the patient the yielding up of his consciousness is an important event, even though it be looked upon as a routine occurrence by the anesthetist. The latter should meet the patient, and be allowed to suggest necessary changes in the anesthetic program and not see the patient for the first time under the influence of preoperative medication on the operating table. There should exist a close association between the various members of the operating group, including the one adminis-

---

\* Read before the Section on Anesthesiology of the California Medical Association at the sixty-eighth annual session, Del Monte, May 1-4, 1939.